

Basic OEM module for rapid application development based on Atmel's AVR ATmega128 processor.

BASIC SPECIFICATIONS

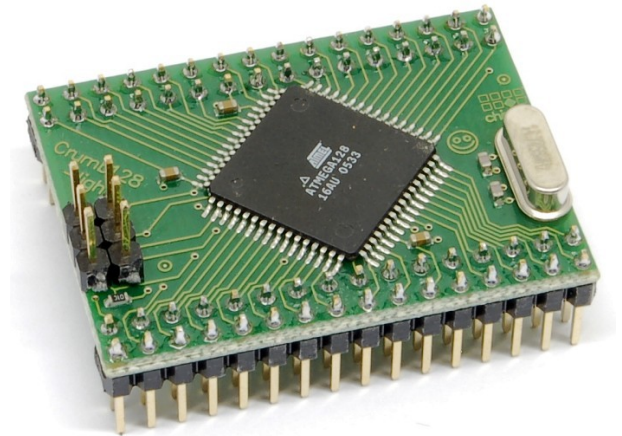
Module	Processor	RAM	EEPROM	Flash	Peripherals
Crumb128light	ATmega128	4kB SRAM	4kB EEPROM	128kB Flash	- none - see Crumb128 for a pincompatible module with extended peripherals onboard

High Performance

- up to 16MHz operating frequency
- single 2.7-5V power supply

Familiar Integrated AVR Peripherals

- up to 51 IO pins available
- two 8 bit, two 16 bit timer/counter
- two 8 bit PWM, six 16 bit PWM channels
- input capture and output compare functions
- real time clock counter
- two programmable UARTs
- master/slave SPI interface
- two wire interface (I²C comp.)
- analog comparator
- 8 channel 10 bit ADC
- watchdog timer
- ISP and JTAG interface



Additional Onboard Components

- HC49 type crystal (frequency selectable)
- standard 6 pin Atmel AVR ISP connector

Expansion Headers

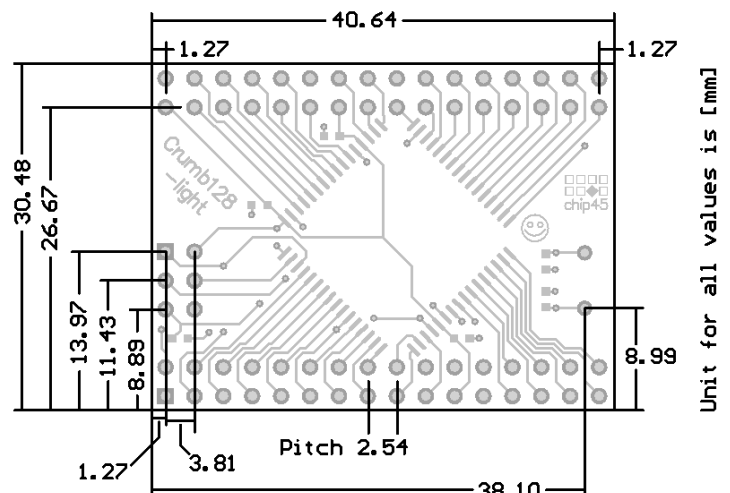
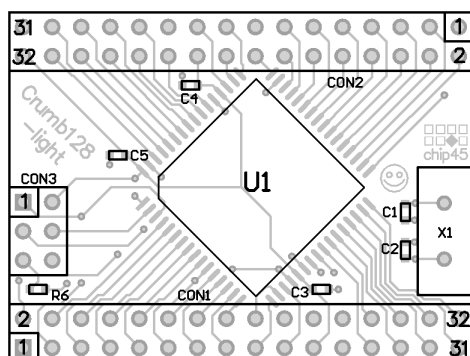
- standard 2.54mm headers with all controller signals and signals from onboard peripherals
- expansion headers are pincompatible to the Crumb128 module (see below pinout for details)

SCOPE OF DELIVERY

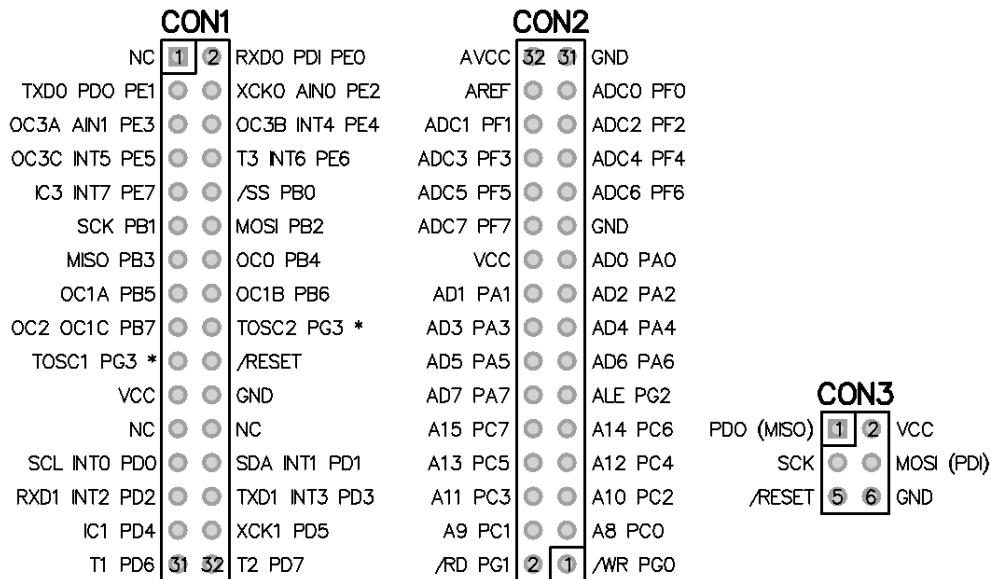
This module is being shipped without pin headers (THT components) preinstalled. A basic double row pin header is included with the module and a Connector Kit with high quality pin headers and receptacles is available separately. Alternatively any other suitable 2.54mm (1/10inch) grid pins can be used.

PHYSICAL DIMENSIONS

Values are [mm] unless otherwise noted.



PIN CONFIGURATION



The signals marked with a * are not available on the Crumb128 module, since an onboard watch crystal is connected here.

OPERATING CHARACTERISTICS

Symbol	Parameter	Condition	Min	Typ	Max	Units
Vcc	Supply Voltage	0-8 MHz	2.7		5.5	V
		0-16 MHz	4.5		5.5	V
Icc	Power Supply Current (Icc strongly depends on CPU activity, like frequency, power saving modes, etc. as well as external circuitry, io pin input and output current, etc. The values denoted here are for reference only and can differ from final application values.)	Active 8MHz Vcc = 3V		10		mA
		Active 16MHz Vcc = 5V		33		mA
T	Operating Temperature (industrial temperature range on request)		-20		+70	°C

DESIGN AND HANDLING GUIDELINES

This module – just like any other semiconductor devices – is susceptible to damage by ESD. Suitable precautions should be taken when handling and transporting devices. The possible damage to devices depends on the circumstances of the handling and transporting, and the nature of the device. The extent of damage can vary from immediate functional or parametric malfunction to degradation of function or performance in use over time. Devices suspected of being affected should be replaced.

DEVELOPMENT TOOLS

The free WinAVR C/C++ compiler toolset provides a powerful and stable development environment, which is nicely integrated into Atmel's AVR-Studio development suite. Please visit the following pages for more details:

- Atmel AVR Studio: http://www.atmel.com/dyn/products/tools_card.asp?tool_id=2725
- WinAVR compiler toolset: <http://winavr.sourceforge.net/>

WHAT ELSE DO YOU NEED?

- An ISP adapter for in-system programming of the ATmega2560, see <http://www.chip45.com/Programmer> for suitable devices.
- A development environment and compiler/assembler (see above DEVELOPMENT TOOLS)

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